

CLAIMS

What is claimed is:

1. An automatic vehicle exterior light control, comprising:
an image array sensor configured to capture at least one frame;
a controller configured with an undim counter and a dim counter;
said controller is configured to acquire images at a rate greater than, or equal to, two hundred forty frames per second;
said controller is further configured to identify an AC powered light source;
said controller is further configured to distinguish between external sources of light and reflections from the controlled vehicle's head lamps off of various external objects; wherein said controller is further configured to generate an exterior light control.
2. An automatic vehicle exterior light control as in claim 1 wherein said controller is further configured to distinguish a stationary light source from an oncoming head lamp and, or, a leading tail lamp.
3. An automatic vehicle exterior light control, comprising:
an image array sensor configured to capture at least one frame; and
a controller configured with an undim counter, said controller is further configured to generate an exterior light control signal as a function of said undim counter.
4. An automatic vehicle exterior light control as in claim 3 wherein said undim counter provides verification of a particular light source with said at least one frame.
5. An automatic vehicle exterior light control as in claim 3 wherein said undim counter is configured to increment with each clear frame.

6. An automatic vehicle exterior light control as in claim 5 wherein said undim counter is compared to a threshold and said exterior light control signal is an exterior light activation signal when said undim counter is greater than and, or equal to, said threshold.
7. An automatic vehicle exterior light control as in claim 1 wherein said undim counter is configured to be set to zero with each frame containing an oncoming head lamp or leading tail lamp.
8. An automatic vehicle exterior light control, comprising:
 - an image array sensor configured to capture at least one frame; and
 - a controller configured with a dim counter, said controller is further configured to generate an exterior light control signal as a function of said dim counter.
9. An automatic vehicle exterior light control as in claim 8 wherein said dim counter provides verification of a particular light source.
10. An automatic vehicle exterior light control as in claim 8 wherein said dim counter is configured to increment with each frame comprising a head lamp and, or, a tail lamp.
11. An automatic vehicle exterior light control as in claim 10 wherein said dim counter is compared to a threshold and said exterior light control signal is an exterior light deactivation signal when said dim counter is greater than and, or equal to, said threshold.
12. An automatic vehicle exterior light control as in claim 8 wherein said dim counter is configured to be set to zero with each clear frame.
13. An automatic vehicle exterior light control, comprising:
 - an image array sensor and a controller configured to acquire images at a rate greater than, or equal to, two hundred forty frames per second, wherein said controller is further configured to generate an exterior light control signal as a function of said images.

14. An automatic vehicle exterior light control as in claim 13 wherein said images comprise fewer than a total number of pixels within said image array sensor.
15. An automatic vehicle exterior light control as in claim 13 wherein said controller is further configured to identify an AC powered light source.
16. An automatic vehicle exterior light control as in claim 13 wherein said controller is further configured to distinguish a stationary light source from an oncoming head lamp and, or, a leading tail lamp.
17. An automatic vehicle exterior light control, comprising:
 - a sensor; and
 - a controller configured to receive a signal from said sensor, said controller is further configured to identify an AC powered light source by detecting intensity modulation, wherein said controller is further configured to generate an exterior light control signal as a function of identifying at least one AC powered light source.
18. An automatic vehicle exterior light control as in claim 17 wherein said sensor is an image array sensor, wherein said controller is configured to analyze a plurality of images acquired from said image array sensor.
19. An automatic vehicle exterior light control as in claim 18 wherein said controller is configured to identify intensity modulation.
20. An automatic vehicle exterior light control as in claim 17 wherein said sensor is a photodiode.
21. An automatic vehicle exterior light control as in claim 20 further comprising a low pass filter.

22. An automatic vehicle exterior light control as in claim 20 wherein said controller is further configured to determine the ratio of modulated light versus unmodulated light in a scene.

23. An automatic vehicle exterior light control as in claim 17 wherein said controller is further configured to distinguish a stationary light source from an oncoming head lamp and, or, a leading tail lamp.

24. An automatic vehicle exterior light control, comprising:
a controller configured to distinguish between external sources of light and reflections from the controlled vehicle's head lamps off of various external objects by comparing the relative brightness of imaged objects between two consecutive images where the brightness of at least one of said head lamps is varied between each image.

25. An automatic vehicle exterior light control as in claim 24 wherein said controller is further configured to generate an exterior light control signal as a function of said external sources of light.

26. An automatic vehicle exterior light control as in claim 24 wherein said exterior light control signal is configured to vary the intensity of at least one variable intensity head lamp.